

Ground-Water Daily Data

What are Daily Data?

Daily Data are derived by summarizing time-series data for each day for the period of record. The time-series data used to derive daily values, sometimes referred to as real-time or instantaneous values may be collected as often as every minute. These data are used to calculate daily data, such as the daily mean, median, maximum, minimum, and/or other derived values. Daily data include approved, quality-assured data that may be published, and provisional data, whose accuracy has not been verified.

General steps to retrieve Ground-Water Daily Data

Retrieving daily data is a multi-step process. The general steps are summarized here. These steps permit users to control the amount and types of data that are retrieved. A more detailed example and explanation follows.

1. **Choose Site Selection Criteria** – Identify the site-selection criteria that will be used to search for sites; for example, to obtain a particular Site type and County, check the Site type and County boxes.
2. **Define the specific Site Selection Criteria** – Define specific choices for site selection criteria. For example, if “County” were selected as a criterion, specify the desired county name(s).
3. **Choose the Output format** – Output options include either summaries or actual data for selected sites.

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Example: Retrieval for Ground-Water Daily Data

To begin, click the **Daily Data** button from the Ground-Water screen. For this example, Pennsylvania Ground-Water data are used.

USGS Ground-Water Data for Pennsylvania

Real-time Data (69 sites)

Real-time data are time-series (recorded at fixed intervals) data from automated equipment and represent the most current hydrologic conditions. Measurements are commonly recorded at 5-60 minute intervals and transmitted to the NWIS database every 1-4 hours. Real-time data are available online for 31 days.

Daily Data (270 sites)

Daily values are summarized from time-series data for each day for the period of record and may represent the daily mean, median, maximum, minimum, and/or other derived value. Daily values include approved, quality-assured data that may be published, and more recent provisional data, whose accuracy has not been verified.

Statistics (168 sites)

Daily

Monthly

Annual

Statistics are computed from approved daily mean time-series data at each site. These links provide summaries of approved historical daily values for daily, monthly, and annual (water year or calendar year) time periods.

Field Water-Level Measurements (34,414 sites)

Manual measurements of depth to water in wells. These measurements are often used to supplement and (or) verify the accuracy of the instantaneous measurements.

The number of possible sites is listed in parentheses to the right of the data category.

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Step 1 - Choose Site Selection Criteria

Step 1 involves choosing the criteria for Site Selection. Select one or more boxes from the four categories: Site Location, Site Identifier, Site Attribute, and Data Attribute. In the next step, specific site selection criteria are defined.

Note: Under Site Attribute, Site type criterion is preselected by default when starting from the surface-water or ground-water data category.

With site type selected (the default) the output will include all the sites meeting those criteria, which in this case would lead to a retrieval of 270 sites.

In this example, County and Site type are selected.

USGS Ground-Water Daily Data for Pennsylvania

Choose Site Selection Criteria

Choose from the following criteria to constrain the number of sites selected. By default, the "Site-type" criterion is preselected below and will default to ground water on the following page. If no additional site-selection criteria are chosen and no additional specifications are defined on the following page then output will be for all 270 ground water sites in Pennsylvania that have daily values data.

[Ground-water daily data example.](#)

Site -- Location --	Site -- Identifier --	Site -- Attribute --	Data -- Attribute --
<input checked="" type="checkbox"/> County	<input type="checkbox"/> Site Name	<input checked="" type="checkbox"/> Site type	<input type="checkbox"/> Number of observations
<input type="checkbox"/> Hydrologic Unit	<input type="checkbox"/> Site Number	<input type="checkbox"/> Ground-water site type	
<input type="checkbox"/> Lat-Long box	<input type="checkbox"/> Multiple Site Numbers	<input type="checkbox"/> Well depth	
	<input type="checkbox"/> Agency Code	<input type="checkbox"/> Hole depth	
	<input type="checkbox"/> File of Site Numbers	<input type="checkbox"/> National aquifer (by code)	
		<input type="checkbox"/> National aquifer (by name)	
		<input type="checkbox"/> Local aquifer (by code)	
		<input type="checkbox"/> Local aquifer (by name)	

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Step 2 - Define the specific Site Selection Criteria

In Step 2, because County was selected in the previous step, one or more specific County name(s) can now be defined by using the shift and control keys.

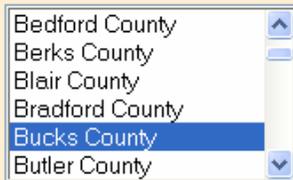
USGS Ground-Water Daily Data for Pennsylvania

Ground-water [daily data example](#).

Select sites which meet all of the following criteria:

Define one or more values for each of the following site-selection criteria: --- or select [new criteria](#)

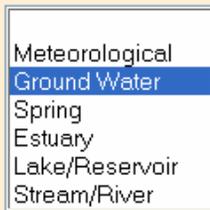
County -- select one or more



A dropdown menu showing a list of counties: Bedford County, Berks County, Blair County, Bradford County, Bucks County (highlighted in blue), and Butler County.

Site type is highlighted by default:
Other data categories can also be specified at this point.

Site type -- select one or more



A dropdown menu showing a list of site types: Meteorological, Ground Water (highlighted in blue), Spring, Estuary, Lake/Reservoir, and Stream/River.

Available parameters -- select sites that have data for the following parameters:

Select one or more parameters --or-- leave blank to select all:

Water Level/Flow Parameters

- Depth to water level, ft below land surface (265 sites)
- Elevation above NGVD 1929, ft (8 sites)
- Gage height, ft (14 sites)
- Streamflow, ft³/s (564 sites)

Meteorological Parameters

- Precipitation, total, in (2 sites)

Water Quality Parameters

- Dissolved oxygen, water, unfiltered, %saturation (1 sites)
- Dissolved oxygen, water, unfiltered, mg/L (32 sites)
- Specific conductance, water, unfiltered, $\mu\text{S}/\text{cm}$ at 25 °C (79 sites)
- Suspended sediment concentration, mg/L (97 sites)
- Suspended sediment discharge, tons/d (97 sites)
- Temperature, water, °C (155 sites)
- Temperature, water, °F (10 sites)
- Turbidity, water, monochrome near infra-red LED light, 780-900 nm, detection angle 90 +/-2.5 degrees, FNU (1 sites)
- Turbidity, water, unfiltered, NTU (1 sites)
- pH, water, unfiltered, field, standard units (48 sites)

Specification of daily values parameters is an option that provides a more advanced search.

Important: All Available parameters for Daily Data are listed by default. Not all parameters are available for all sites. When a specific site has been selected, the available parameters will be shown.

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Step 3 – Choose the Output format

Choose from one of the two output options.

The first set of options, **Display Summary of Selected Sites**, provides lists of sites or descriptive site information.

Choose Output Format
Display Summary of Selected Sites
Choose one of the following options for displaying descriptions of the sites meeting the criteria above:

? Table of sites sorted by grouped by

? Scroll list of sites -- allows selection of data for multiple sites

? Brief descriptions -- allows selection of data for multiple sites

? Site-description information displayed in

? Save file of selected sites to local disk for future upload

<--Select fields to include in site-description output

Agency	↑
Site identification number	↓
Site name	
DMS latitude	↓

The second set of options, **Retrieve USGS Ground-Water Daily Data for Selected Sites**, provides tables or graphs of data.

Retrieve USGS Ground-Water Daily Data for Selected Sites
Choose one of the following options for displaying data for the sites meeting the criteria above:

? Retrieve data for:

the previous days (1 - 55555) **OR**

for the date range: First date: Last date: (1854-04-24 through 2006-05-31)

Output Options:

? Graphs of data -- use arithmetic Y-axis for discharge

? Graphs of data with long-term statistics -- use arithmetic Y-axis for discharge

? Graphs of data with field measurements -- use arithmetic Y-axis for discharge

? Table of data

? Tab-separated data

In this example, the defaults are used and a table of sites sorted by site number is produced.

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The defaults were used for the Pennsylvania example, and the result is a table of sites sorted by site number. When a site is selected, data for the last 365 days are retrieved.

USGS Ground-Water Daily Data for Pennsylvania

Site Selection Results -- 8 sites found

Site type = Ground Water
County = Bucks

[Save file of selected sites](#) to local disk for future upload

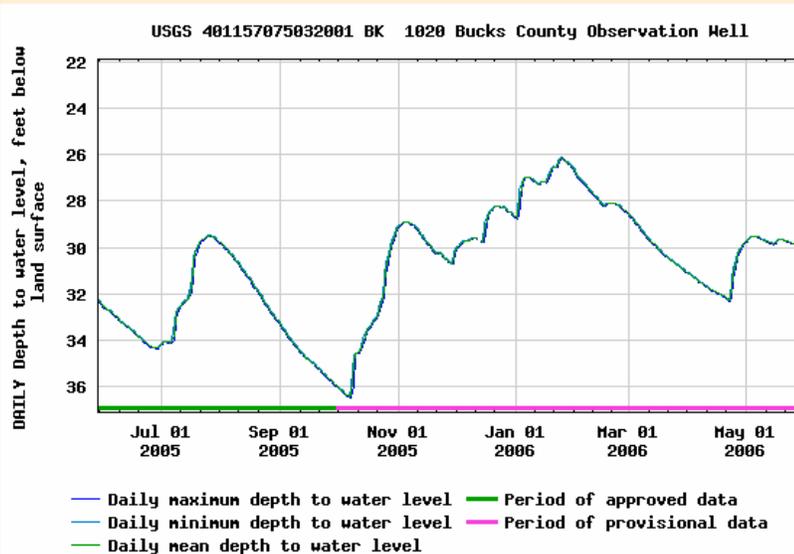
Data for individual sites can be obtained by selecting the site number below

Agency	Site Number	Site Name
USGS	401157075032001	BK 1020 Bucks County Observation Well
USGS	401934075043001	BK 1341
USGS	402047075012001	BK 1840
USGS	402210074572001	BK 2168
USGS	402258075084202	BK 1744
USGS	402643075150501	BK 929 Bucks County Observation Well
USGS	402957075083701	BK 2007
USGS	403113075143701	BK 2128

When a ground-water site number is selected, the result is a display of the available parameters for the site and a graph of the daily data for the last 365 days. The hydrograph includes approved and provisional data shown on the same graph and is highlighted by green and magenta lines, respectively.

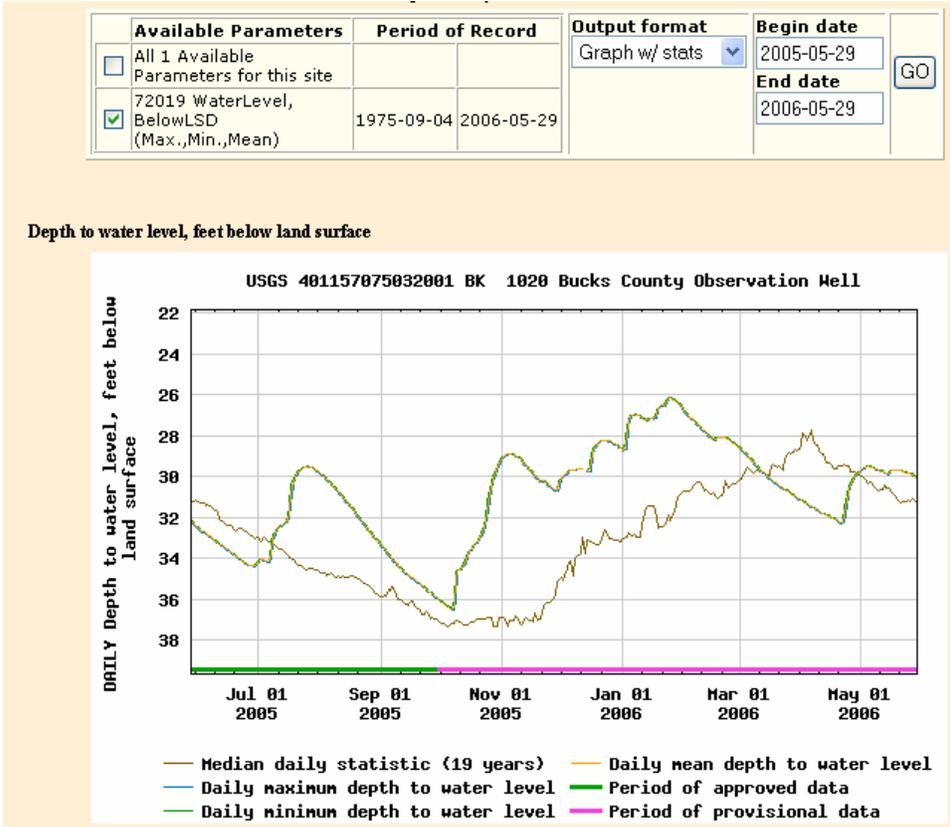
Available Parameters	Period of Record	Output format	Begin date	End date
<input type="checkbox"/> All 1 Available Parameters for this site		Graph w/ stats	2005-05-29	
<input checked="" type="checkbox"/> 72019 WaterLevel, BelowLSD (Max.,Min.,Mean)	1975-09-04 2006-05-29			2006-05-29

Depth to water level, feet below land surface



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Another useful output format is the **Graph w/stats** option which shows the daily mean depth to water plotted with the median daily depth to water. Approved and provisional data are shown on the same graph highlighted by green and magenta lines.



The median daily depth to water level is based on 19 years of approved data and is shown as a brown line on the hydrograph for the observation well.